

**1 MAY 2000**



***Communications and Information***

***ENTERPRISE INFORMATION TECHNOLOGY  
ARCHITECTURES***

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OPR: HQ AFCA/ITAI (Mr. Kenneth Fore)

Certified by: HQ USAF/SCXX  
(Lt Col Terry G. Pricer, Sr.)

Pages: 15

Distribution: F

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This instruction implements Air Force Policy Directive (AFPD) 33-1, *Command, Control, Communications, and Computer (C4) Systems*, and institutionalizes Air Force Enterprise Information Technology (IT) architecture development responsibilities. It supports the architecture-related mandates of the Clinger-Cohen Act of 1966, *Information Technology Management Reform Act*, and promulgates Air Force Enterprise Command, Control, Communications, and Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) architecture products identified in the Department of Defense (DoD) C4ISR Architecture Framework. Use this instruction to support the Air Force planning process prescribed in Air Force Instruction (AFI) 10-1401, *Modernization Planning Documentation*, and AFPD 33-1. Major commands (MAJCOM), field operating agencies (FOA), and direct reporting units may supplement this instruction only after coordinating their drafts with Headquarters Air Force Communications Agency (HQ AFCA/ITAI), 203 W. Losey Street, Room 1065, Scott AFB IL 62225-5224. Send comments to HQ AFCA/ITPP, 203 W. Losey Street, Room 1065, Scott AFB IL 62225-5233, with an information copy to HQ AFCA/ITA and Headquarters Air Force Communications and Information Center (HQ AFCIC/ITAI), 1250 Air Force Pentagon, Washington DC 20330-1250. Use AF Form 847, **Recommendation for Change of Publication**. Refer to **Attachment 1** for a glossary of references and supporting information. Maintain and dispose of records created as a result of processes described in this publication in accordance with AFMAN 37-139, *Records Disposition Schedule* (will convert to AFMAN 33-322V4).

## **1. Introduction .**

### **1.1. Air Force Enterprise Information Technology Vision.**

1.1.1. The DoD Information Technology Management Strategic Plan (ITMSP) provides overall DoD guidance for managing information resources. The ITMSP establishes the DoD shared vision for IT, top goals and objectives, measures of performance, and strategies to accomplish the goals.

## Report Documentation Page

<b>Report Date</b> 01 May 2000	<b>Report Type</b> N/A	<b>Dates Covered (from... to)</b> -
<b>Title and Subtitle</b> Air Force Instruction 33-124, Communications and Information Enterprise Information Technology Architectures	<b>Contract Number</b>	
	<b>Grant Number</b>	
	<b>Program Element Number</b>	
<b>Author(s)</b>	<b>Project Number</b>	
	<b>Task Number</b>	
	<b>Work Unit Number</b>	
<b>Performing Organization Name(s) and Address(es)</b> Secretary of the Air Force Pentagon Washington, DC 20330-1250	<b>Performing Organization Report Number</b> AFI33-124	
<b>Sponsoring/Monitoring Agency Name(s) and Address(es)</b>	<b>Sponsor/Monitor's Acronym(s)</b>	
	<b>Sponsor/Monitor's Report Number(s)</b>	
<b>Distribution/Availability Statement</b> Approved for public release, distribution unlimited		
<b>Supplementary Notes</b>		
<b>Abstract</b>		
<b>Subject Terms</b>		
<b>Report Classification</b> unclassified	<b>Classification of this page</b> unclassified	
<b>Classification of Abstract</b> unclassified	<b>Limitation of Abstract</b> UU	
<b>Number of Pages</b> 15		

1.1.2. The Air Force ITMSP defines the Air Force IT mission and vision as “Information Superiority for GLOBAL ENGAGEMENT through Technological Innovation”. It draws from the full range of Air Force long range planning processes and documents the IT vision, goals, objectives, and strategies. Using strategies-to-task methodology, the Air Force identifies gaps and redundancies in its ability to accomplish the Air Force mission together with recommendations for value-added solutions.

1.1.3. The Air Force modernization planning process (MPP), guided by the Air Force ITMSP, lays the foundation for IT requirements generation and acquisition. The MPP’s Mission Area Assessment, Mission Needs Analysis (MNA), and Mission Solution Analysis, generate Mission Area Plans, Mission Support Plans, and fiscally constrained investment plans for the Future Years Defense Plan. AFI 10-1401 provides additional information on the MPP. The DoD C4ISR Architecture Framework provides architecture views and, with the utilization of appropriate analysis tools, establishes integrated views supporting the MNA.

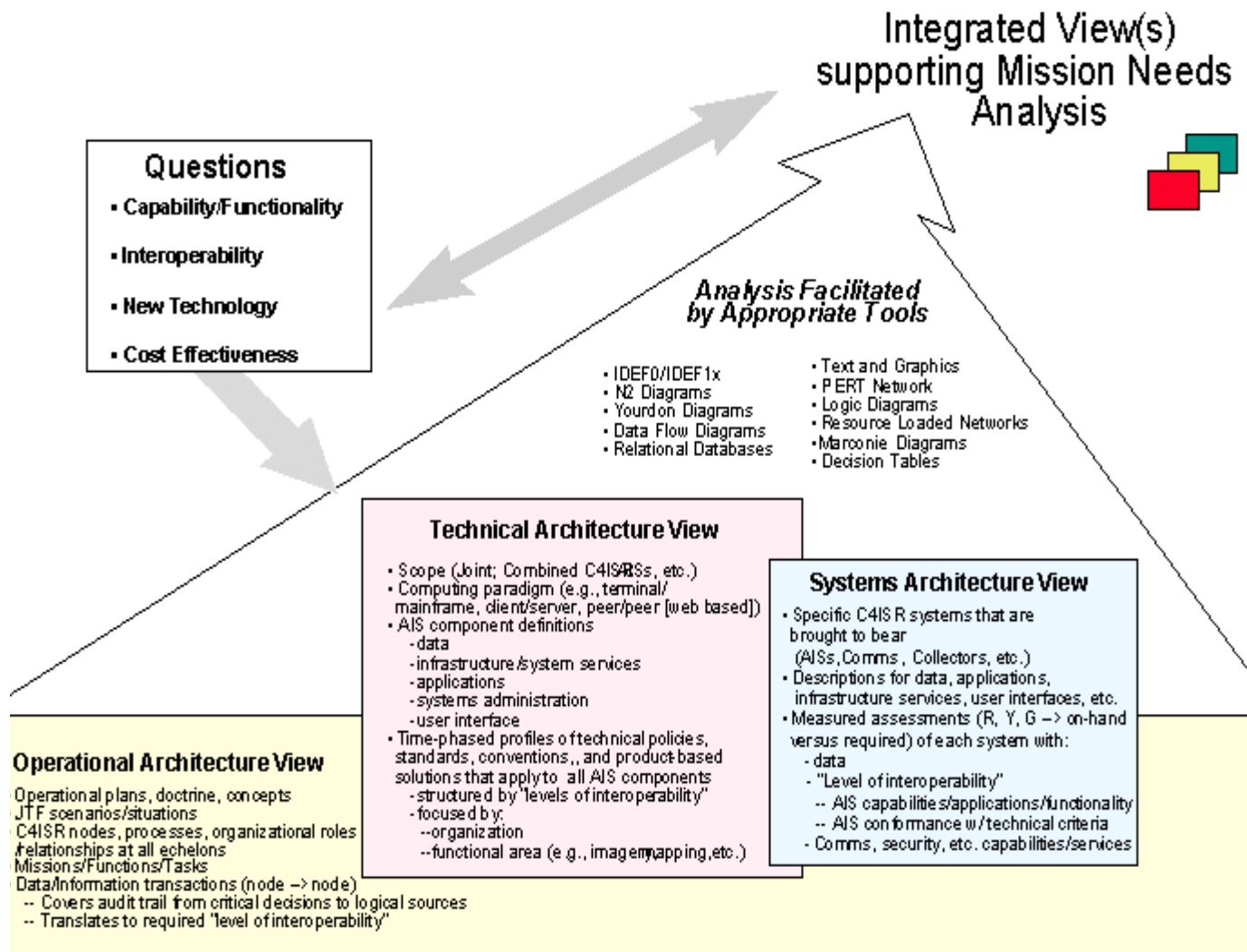
1.2. The DoD C4ISR Architecture Framework. The Office of Secretary of Defense Memorandum, “*Strategic Direction for a DoD Architecture Framework*, 13 February 1998, states: “The utilization of C4ISR Architecture Framework Version 2.0 allows Information Technology (IT) architectures to be compared and integrated within DoD components and across joint boundaries so that warfighter interoperability and C4ISR investments decisions can be addressed from a common frame of reference.” This instruction implements the intent of the memorandum and C4ISR Architecture Framework and is directive for all the Air Force to:

1.2.1. Describe all new C4ISR or related architectures according to the architecture document formats in the C4ISR Framework.

1.2.2. Redescribe existing C4ISR architectures according to the framework during appropriate revision cycles.

1.2.3. The framework guides architecture description and standardizes architecture development by establishing and defining three architecture views, operational view, systems view, and technical view; each with essential and supporting products. Using the C4ISR Architecture Framework views, accompanying products, and appropriate analysis tools, the Air Force can build an integrated Enterprise C4ISR architecture supporting Air Force MPP MNA. **Figure 1.** shows the integrated view supporting the MNA.

Figure 1. Integrated View.



1.3. The Air Force Enterprise IT Architecture can provide an integrated management framework for:

1.3.1. Supporting Joint, combined, and coalition architectures and guiding Air Force organizational process planning and contingency implementation.

1.3.2. Providing guidance to Air Force organizations participating in the process of planning and implementing support to Joint, combine, and coalition operations.

1.3.3. Addressing and resolving Air Force operating environment issues within and across the Air Force, Joint, combined, and coalition environments.

1.3.4. Providing models for integrating United States IT into the combined and coalition mission area and a vehicle for addressing and resolving the Air Force environment.

1.3.5. Evolving or maintaining existing Air Force IT systems (or Air Force-led Joint IT systems).

1.3.6. Achieving Federal, DoD, and Air Force strategic mission and IT goals.

- 1.3.7. Integrating functional processes and information flows with new IT systems.
- 1.3.8. Specifying IT standards for information exchange and resource sharing.
- 1.3.9. Acquiring new IT systems within the Air Force mission area, functional domain, and the Air Force Program Executive Office portfolio.

#### 1.4. Enterprise IT Architecture Objectives:

1.4.1. The Air Force IT architecture staffs must work closely with the operational and support communities understanding operational missions, and collaborate to ensure optimal mission processes are in effect before modifying and acquiring new C4ISR systems. The Air Force Enterprise IT Architecture is a subset of the DoD Joint Enterprise Architecture.

1.4.2. The Air Force operations planners, mission area leaders, IT architecture staffs, and acquisition program managers are adopting a new way of considering each of their systems within its current or intended operational environment as identified in Air Force Strategic Plan Vol. II. The systems of systems approach views previously independent and diverse C4ISR, weapon, and other systems within a mission or functional area as an integrated whole from the outset. This new paradigm result in a high-level view and understanding of an interdependent organism, whose component members, however autonomous, are all affected by the health of each individual member.

1.4.3. The goals of this system of systems viewpoint are to combine, relate, and integrate existing and future systems, eliminate duplicative efforts, enable real-time control and execution of all air and space missions, and eventually deliver full plug and play interoperability for seamless, integrated battlespace management and warfighting execution. Building IT architectures on this approach supports system requirements definition, guides the modification, acquisition, and upgrade of IT systems, and increases the effectiveness, efficiency, and interoperability of a single integrated Air Force system of interacting communications and information systems (each based on a common data, communications, and operating environment).

1.4.4. Mission area, functional, and acquisition program managers must all follow and support As Is (today's) and To Be (the target) Air Force Task (AFT)-oriented domain models development using appropriate Operational, Systems, and Technical Architecture products, models, and analytical tools. Models and tools measure interval IT effectiveness and benchmark performance against similar business and government activities. Developed models and analytical tools predict mission essential task (MET) improvements made possible by Air Force and DoD IT investments.

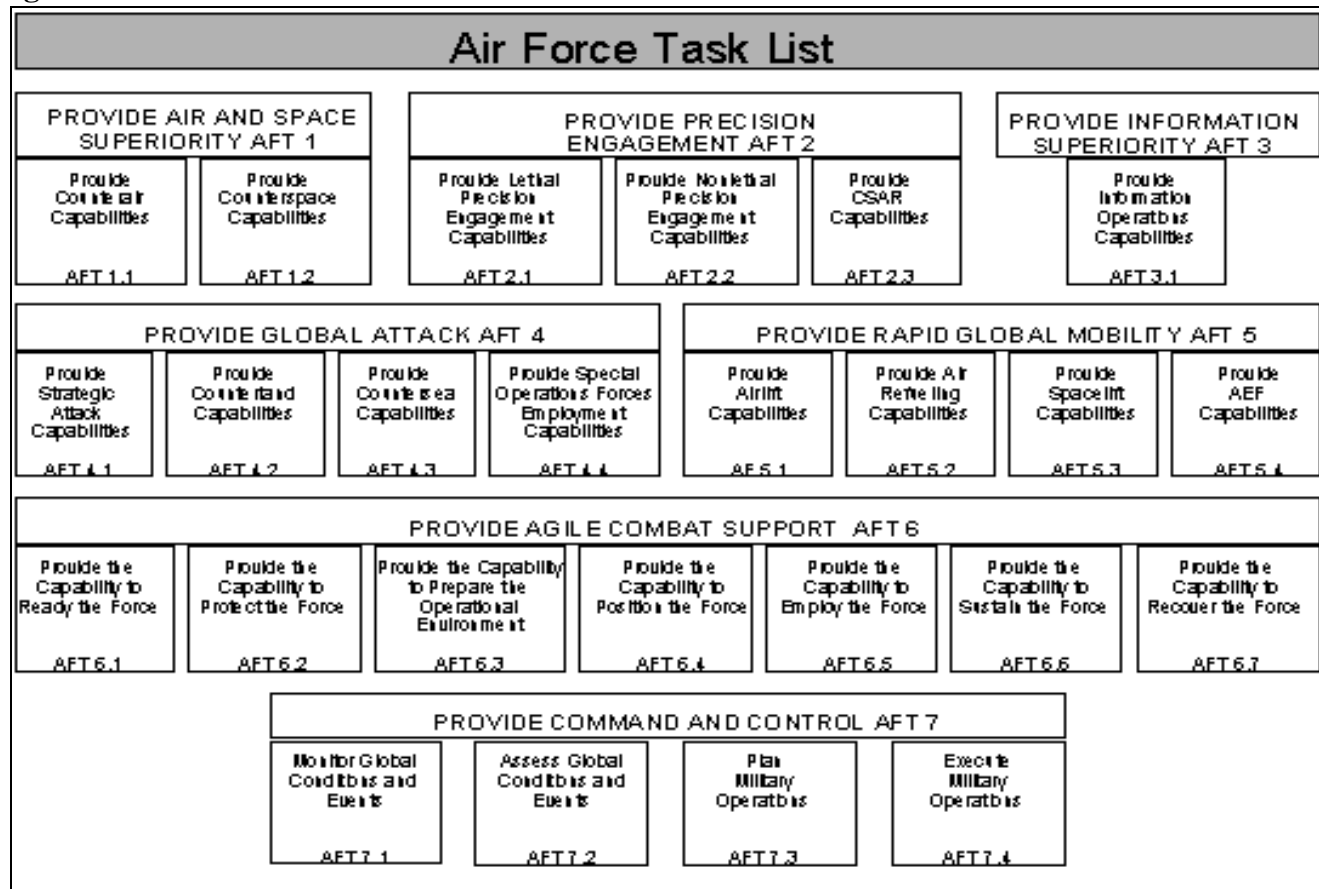
## 2. Air Force Core Competencies.

2.1. The Air Force has selected Core Competencies that organize and describe major warfighting responsibilities: Air and Space Superiority, Global Attack, Rapid Global Mobility, Precision Engagement, Information Superiority, and Agile Combat Support. Just as the Core Competencies contain Air Force missions, they also represent the top-level functional divisions of Air Force IT Architecture. By organizing the Air Force Enterprise IT architecture by missions vs. MAJCOM domains, the Air Force can avoid IT systems duplication.

2.2. The Air Force Task List, (AFTL), (Air Force Doctrine Document [AFDD] 1-1, *Air Force Task List [AFTL]*), contains mission-essential AFTs organized under each of the Core Competencies (**Figure 2**). The AFTL provides the comprehensive framework to express all Air Force activities contrib-

uting to the defense of the nation and its national interests. It also provides a logical way to organize Air Force Enterprise IT architecture.

**Figure 2. Air Force Tasks.**



### 3. IT Architecture Planning and Development .

3.1. Planning Factors. Each Air Force organization responsible for developing architectures does so according to the C4ISR Architecture Framework. This Framework also provides recommended steps needed to complete architecture views.

#### 3.2. Architecture Development Guidance:

3.2.1. The Air Force, as specified in paragraph 4.8., develops an Operational Architecture and associated Systems Architecture for each AFT shown in Figure 2.

3.2.2. The Air Force develops all DoD C4ISR Architecture Framework, Version 2.0, essential products (e.g., OV-1) for Operational, System, and Technical IT Architecture views for all AFT.

3.2.3. In addition to DoD essential operational architecture products, the Air Force develops its Operational Architecture products, Activity Model (OV-5) and Logical Data Model (OV-7). These products provide information for follow-on, multi-functional data architecture modeling and data element standardization working groups. The OV-5 provides the relationships among activities and the OV-7 provides the data requirements and structural business rules for these

activities. See AFI 33-110, *Data Administration Program*, for further information on these Air Force data architecture and modeling activities.

3.2.4. The Air Force shall build its architecture according to the Air Force Strategic Plan Vol. II delineating the near-term, mid-term, and far-term periods. Air Force shall build its architecture using the operating environments as constraints, accenting the major regional conflict.

#### **4. Responsibilities .**

##### **4.1. The Air Staff and Secretariat Functional Staff will:**

4.1.1. Achieve Air Force strategic and information resource management goals by implementing integrated Air Force IT Architecture.

4.1.2. Use an integrated approach and domain framework for evolving or maintaining IT Operational, Systems, and Technical Architecture views.

##### **4.2. Headquarters Air Force Communications and Information Center (HQ AFCIC) will:**

4.2.1. Acting on behalf of the Air Force-Chief Information Officer (AF-CIO), provide oversight to ensure specific Air Force IT architecture views are developed for integration into Air Force enterprise-wide architecture views.

4.2.2. Chair the Joint Technical Architecture-Air Force (JTA-AF) configuration control board (CCB).

4.2.3. Coordinate with the AF-CIO Council, the DoD and Federal CIO Council, the DoD Architecture Coordination Council, the United States Military Communications-Electronics Board, and other related agencies or boards to improve Air Force IT architectural views.

4.2.3.1. In conjunction with the Secretary of the Air Force (SAF/FMB), provide direction and funding support for the integration and use of Operational and Systems Architecture view products within the Air Force resource allocation processes.

4.2.3.2. In conjunction with Headquarters United States Air Force (HQ USAF/XO), provide direction and funding support for the integration and use of Operational and Systems Architecture view products within the Air Force strategic planning, and modeling and simulation processes.

4.2.3.3. In conjunction with SAF/AQ, provide direction and funding support for the integration and use of Systems and Technical Architecture view products within the Air Force system acquisition process.

4.2.3.4. In conjunction with HQ USAF/XP, provide direction and funding support for integration and use of Operational and Systems Architecture view products within the Air Force business process reengineering (BPR).

4.2.4. Support AF-CIO review of functional, MAJCOM, and AFTL-oriented architecture views to ensure adequate and secure support to the Air Force and Joint warfighter.

4.2.5. Provide guidance aimed at increasing Air Force and Joint warfighter capabilities through increased integration and interoperability of supporting communications, computer, and information systems.

- 4.2.6. Develop a common template or blueprint (purpose, scope, context, environment, characteristics, scenario, mission area interface requirements, joint/combined/coalition interface requirements, minimum data requirements, etc.) as a guideline for each AFT/mission area/functional domain architecture effort. The goal is to ensure diverse Air Force architecture products are integrated and to identify crosscutting system-to-system interfaces in a common fashion.
- 4.2.7. Provide Air Force representation to the DoD Technical Architecture Steering Group.
- 4.2.8. Establish training guidance for Air Force IT architects.
- 4.3. Headquarters Air Force Communications Agency (HQ AFCA) will:
  - 4.3.1. Work with AFT planners and architects to develop policy objectives, assign specific tasks, and track timelines, milestones, and issues governing the architecture development and support process.
  - 4.3.2. Perform IT architecture liaison functions with agencies both internal and external to the Air Force.
  - 4.3.3. Gather, distribute, and brief information relevant to the IT architecture to groups inside and outside the Air Force.
  - 4.3.4. Advocate IT policies and positions to agencies outside the Air Force.
  - 4.3.5. Assist AFT/mission area/functional domain planners and architects in identifying and programming resources to perform the architecture development and support process.
  - 4.3.6. Support technical architecture view development across AFTs/mission areas/functional domains.
  - 4.3.7. Convene periodic AFT/mission area/functional domain architect meetings to address common architectural issues and review the status of architectural efforts.
  - 4.3.8. In coordination with AFT/mission area/functional domain area planners and architects, develop, identify, and disseminate recommendations for automated tools that allow/encourage integration, modularity, expandability, simulation, analysis, and reuse of architecture products.
  - 4.3.9. Provide for the development and maintenance of the JTA-AF.
  - 4.3.10. Act as the Air Force liaison to the Defense Information Systems Agency (DISA) Center for Standards for Joint Technical Architecture and Data Standardization matters.
  - 4.3.11. Provide input for the Air Force on implementation of National Institute of Standards and Technology IT standards.
  - 4.3.12. Serve as secretariat and provide legal advice to JTA-AF CCB.
  - 4.3.13. Budget and fund for architectural responsibilities for HQ AFCA as directed by this instruction.
  - 4.3.14. In collaboration with HQ AFCIC, Aerospace Command and Control, and Intelligence, Surveillance and Reconnaissance Center (AC2ISRC), and Electronic Systems Center (ESC), aid AF-CIO in developing and maintaining Air Force enterprise-wide operational and systems architecture views.



4.3.15. Provide Air Force representation to the DoD Joint Technical Architecture Development Group and C4ISR Framework panels and working groups.

4.3.16. Establish overall Air Force Systems Architecture integration guidance and criteria.

4.4. Aerospace Command and Control, and Intelligence, Surveillance, and Reconnaissance Center (AC2ISRC) will:

4.4.1. Build and maintain an Air Force Enterprise Operational Architecture.

4.4.1.1. Use MAJCOM and agency built operational architecture views and accompanying products (paragraph 4.8.) to build the Air Force Enterprise Operational Architecture.

4.4.1.2. Adjudicate and integrate MAJCOM and agency built Operational Architecture views and accompanying products (e.g., interfaces).

4.4.1.3. Adjudicate MAJCOM and agency terminology for information exchange requirement within the Air Force Enterprise IT Architecture.

4.4.1.4. Distinguish MAJCOM and agency Operational Architecture product commonality.

4.4.2. With HQ USAF/XOI, HQ AFCIC/SYNI, Air Force Doctrine Center, Air Force Information Warfare Center, the National Security Agency, Headquarters Air Intelligence Agency (HQ AIA), and others, ensure MAJCOM and agency built Operational Architecture views have adequately considered information protection requirements.

4.4.3. Budget and fund for architectural responsibilities, including architect training as directed by this instruction.

4.5. The Electronic Systems Center (ESC) Defense Information Infrastructure - Air Force (DII-AF) Chief Architect's Office will:

4.5.1. Develop, build, and maintain Air Force Enterprise IT Systems Architecture views for the METs under each of the Air Force Task List in AFDD 1-1 ([Figure 2.](#)).

4.5.2. Establish overall DII-AF architecture integration guidance and criteria, build the Air Force Enterprise System Architecture view and accompanying products, as well as coordinate the activities of the ESC domain architecture councils.

4.5.3. Provide technical support for JTA analysis to HQ AFCA, coordinate Defense Information Infrastructure Common Operating Environment (DII COE) matters with DISA, provide DII COE guidance to program managers, and support the ESC architecture integration council.

4.5.4. Work with AC2ISRC, HQ AFCA, HQ AFCIC, and others in defining and developing the Air Force Enterprise IT Systems Architecture. Establish IT System Architecture compliance criteria and responsibilities for this architecture prior to acquisition of systems architecture components.

4.5.5. Budget and fund for architecture responsibilities, including architect training, as directed by this instruction.

4.6. Headquarters Air Combat Command (HQ ACC), Headquarters Air Education and Training Command (HQ AETC), Headquarters Air Force Materiel Command (HQ AFMC), Headquarters Air Mobility Command (HQ AMC), Headquarters Air Force Space Command (HQ AFSPC), Headquar-

ters Air Force Special Operations Command (HQ AFSOC), and Headquarters Air Intelligence Agency (HQ AIA), according to the descriptions contained in DoD C4ISR Framework, will:

- 4.6.1. View products, develop, construct, maintain, and update assigned AFT-oriented AS-IS and TO-BE Operational Architecture that describes and characterizes AFTs, mission areas or functional domains (paragraph 4.8.), according to AC2ISRC's Air Force enterprise Operational Architecture.
- 4.6.2. View products, develop, build, maintain, and update assigned AFT-oriented AS-IS and TO-BE Systems Architecture views. Identify and characterize all IT systems used to execute and support their AFT, according to ESC's Air Force IT Systems Architecture.
- 4.6.3. Develop or adopt a Technical Architecture view (IT systems standards profile, conformant with the DoD JTA and JTA-AF, or a domain COE, conformant with DII-COE), to guide the implementation of their AS-IS and TO-BE IT Systems Architecture views.
  - 4.6.3.1. Comply with the mandatory guidance of JTA-AF for all Air Force communications and information systems and the interfaces with other key assets (e.g., weapon systems, sensors, command and control systems, etc.).
  - 4.6.3.2. Ensure their program managers are assigned responsibility for ensuring conformance with the JTA-AF or securing the appropriate waivers according to the JTA-AF Implementation Plan. This policy applies to new IT systems and upgrades to existing IT systems.
- 4.6.4. Budget and fund architecture responsibilities, including IT architect training, as directed by this instruction.
- 4.7. Agencies, FOAs, Reserves and Air National Guard will:
  - 4.7.1. Participate with lead (OPR listed in paragraph 4.8.) AFT/mission area/functional domain planners and architects in the development of AS-IS and TO-BE architectures.
  - 4.7.2. Provide lead (OPR listed in paragraph 4.8.) AFT/mission area/functional domain planners and architects documented requirements supporting AS-IS and TO-BE architectures.
  - 4.7.3. Plan, program, budget for, and submit requirements to the lead AFT/mission area/functional domain planner and architect (paragraph 4.8.).
  - 4.7.4. Assist AS-IS and TO-BE architecture reviews to identify the impact and set priorities.
  - 4.7.5. Budget and fund for the architectural responsibilities, including IT architect training, as directed by this instruction.
  - 4.7.6. Assist AFT/mission area/functional domain planners and architects, develop, collect and evaluate independently verifiable system/network performance measurement metrics and data.
- 4.8. Air Force Task Architectural Responsibilities (Table 1.). The organizations indicated will establish and conduct cross-command architecture development working groups to develop and maintain Operational and associated Systems Architecture views.

**Table 1. Air Force Task Responsibilities.**

<b>AIR FORCE TASK</b>	<b>OPR/OCR AFT Lead</b>
AFT 1.0, Provide Air and Space Superiority	HQ AFSPC
AFT 1.1, Provide Counterair Capabilities	HQs ACC/USAFE
AFT 1.2, Provide Counterspace Capabilities	HQ AFSPC
AFT 2.0, Provide Precision Engagement	HQ AFSOC
AFT 2.1, Provide Lethal Precision Engagement Capabilities	HQs ACC/AFSPC, AFSOC
AFT 2.2, Provide Non-lethal Precision Engagement Capabilities	HQs AFSOC/AFSPC
AFT 2.3, Provide Combat Search and Rescue (CSAR) Capabilities	HQs ACC/AFSOC
AFT 3.0, Provide Information Superiority	HQ AIA
AFT 3.1, Provide Information Operations Capabilities	HQs AIA/AFSPC, AC2ISRC
AFT 4.0, Provide Global Attack	HQ ACC
AFT 4.1, Provide Strategic Attack Capabilities	HQs ACC/AFSOC
AFT 4.2, Provide Counterland Capabilities	HQs USAFE/ACC/AFSOC
AFT 4.3, Provide Countersea Capabilities	HQs PACAF/ACC/AFSOC
AFT 4.4, Provide Special Operations Forces (SOF) Employment Capabilities	HQs AFSOC/ACC
AFT 5.0, Provide Rapid Global Mobility	HQ AMC
AFT 5.1, Provide Airlift Capabilities	HQs AMC/AFSOC
AFT 5.2, Provide Air Refueling Capabilities	HQs AMC/AFRC/AFSOC
AFT 5.3, Provide Spacelift Capabilities	HQ AFSPC
AFT 5.4, Provide Aerospace Expeditionary Force Capabilities	HQs ACC/AMC
AFT 6.0, Provide Agile Combat Support	AF-CIO
AFT 6.1, Provide the Capability to Ready the Force	HQs AFMC/AETC/AFRC
AFT 6.2, Protect the Force	HQs AFSFC/ACC
AFT 6.3, Provide the Capability to Prepare the Operational Environment	HQs AMC/AETC
AFT 6.4, Provide the Capability to Position the Force	HQ AMC
AFT 6.5, Provide the Capability to Employ the Force	HQ ACC
AFT 6.6, Provide the Capability to Sustain the Force	HQ AFMC
AFT 6.7, Provide the Capability to Recover the Force	HQ ACC
AFT 7.0, Provide Command and Control	AC2ISRC
AFT 7.1, Monitor Global Conditions and Events	AC2ISRC, HQs AFSPC/AIA
AFT 7.2, Assess Global Conditions and Events	HQs AIA/AFSPC, AC2ISRC
AFT 7.3, Plan Military Operations	AC2ISRC, HQs ACC/AMC

AIR FORCE TASK	OPR/OCR AFT Lead
AFT 7.4, Execute Military Operations	AC2ISRC, HQs ACC/AMC

WILLIAM J. DONAHUE, LT GENERAL, USAF  
Director, Communications and Information

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

Clinger-Cohen Act of 1996, *Information Technology Management Reform Act of 1996*

OMB Circular A-130, *Management of Federal Information Resources*

OSD Memorandum, *Strategic Direction for a DoD Architecture Framework*, 23 February 1998

JP 1-02, *DoD Dictionary of Military and Associated Terms*

CJCSI 6212.01A, *Compatibility, Interoperability, and Integration of Command, Control, Communications, Computers, and Intelligence Systems*

AFDD 1-1, *Air Force Task List (AFTL)*

AFPD 33-1, *Command, Control, Communications, and Computer (C4) Systems*

AFI 10-1401, *Modernization Planning Documentation*

AFI 33-103, *Requirements Development And Processing*

AFI 33-110, *Data Administration Program*

AFMAN 37-139, *Records Disposition Schedule* (will convert to AFMAN 33-322V4)

***Abbreviations and Acronyms***

**AC2ISRC**—Aerospace Command and Control & Intelligence, Surveillance, and Reconnaissance Center

**AF-CIO**—Air Force-Chief Information Officer

**AFDD**—Air Force Doctrine Document

**AFI**—Air Force Instruction

**AFPD**—Air Force Policy Directive

**AFT**—Air Force Task

**AFTL**—Air Force Task List

**BPR**—Business Process Reengineering

**CIO**—Chief Information Officer

**C4**—Command, Control, Communications, and Computers

**C4ISR**—Command, Control, Communications, and Computer, Intelligence, Surveillance, and Reconnaissance

**CCB**—Configuration Control Board

**ESC**—Electronic Systems Center

**DII-AF**—Defense Information Infrastructure - Air Force

**DII COE**—Defense Information Infrastructure Common Operating Environment

**DISA**—Defense Information Systems Agency

**DoD**—Department of Defense

**FOA**—Field Operating Agency

**HQ ACC**—Headquarters Air Combat Command

**HQ AIA**—Headquarters Air Intelligence Agency

**HQ AETC**—Headquarters Air Education and Training Command

**HQ AFCA**—Headquarters Air Force Communications Agency

**HQ AFCIC**—Headquarters Air Force Communications and Information Center

**HQ AFMC**—Headquarters Air Force Materiel Command

**HQ AFSOC**—Headquarters Air Force Special Operations Command

**HQ AFSPC**—Headquarters Air Force Space Command

**HQ AMC**—Headquarters Air Mobility Command

**HQ USAF**—Headquarters United States Air Force

**IT**—Information Technology

**ITMSP**—Information Technology Management Strategic Plan

**JP**—Joint Publication

**JTA**—Joint Technical Architecture

**JTA-AF**—Joint Technical Architecture - Air Force

**MAJCOM**—Major Command

**MET**—Mission Essential Task

**MNA**—Mission Needs Assessment

**MPP**—Modernization Planning Process

**OV**—Operational View

**SAF**—Secretary of the Air Force

### ***Terms***

**As-Is Architecture**—Defines the current, existing, baseline operations, systems, or conditions.

**Business Process Reengineering**—A structured approach by all or part of an enterprise to improve the value of its products and services while reducing resource requirements. (AFI 33-103)

**Command, Control, Communications, and Computer (C4) System**—An integrated system of doctrine, procedures, organizational structures, personnel, equipment, facilities, and communications designed to support a commander's exercise of command and control, across the range of military operations. Also called C4 systems. Within the Air Force, also called communications and information systems. (JP 1-02)

**Command, Control, Communications, Computers, and Intelligence (C4I)—Systems**

Communications, automated information, or intelligence systems or equipment that assist the commander in planning, directing, and controlling forces. C4I systems consist of hardware, software, personnel, facilities, and procedures, and represent the integration of information (including data), information processing and information transfer systems organized to collect, produce, store, display, and disseminate information. (CJCSI 6212.01A)

**Communications-Electronics**—Denotes voice-data usage.

**Domain**—A logical sub-division of an enterprise into areas of similar functions.

**Enterprise**—The aggregate of all functional elements participating in a BPR action regardless of the organizational structure housing those functional elements.

**Enterprise Architecture**—Provides an independent assessment of existing systems or baseline, an investment strategy or blueprint for the future, and an action plan.

**Functions**—(DoD) The appropriate or assigned duties, responsibilities, missions, or tasks of an individual, office, or organization. As defines in the National Security Act of 1947, as amended, the term “function” includes functions, powers, and duties (5 United States Code 171n (a)). (JP 1-02)

**Information**—The refinement of data through known conventions and context for the purpose of imparting knowledge. (C4ISR Architecture Framework)

**Information Exchange Requirement**—A requirement for the content of an information flow. Associated performance attributes as information size, throughput, timeliness, quality, and quantity values. (C4ISR Architecture Framework)

**Information Flow**—The movement of information from its source to the user, including all handling, process, and transfers that enable its movement.

**Information Operations**—(DoD) Actions taken to affect adversary information and information systems while defending one’s own information and information systems. Also called IO. See also defensive information operations; information; information system; offensive information operations; operation. (JP 1-02)

**Information Technology**—Any equipment or interconnected system or subsystem of equipment, used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the executive agency. Includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources. (OMB Circular No. A-130)

**Interoperability**—The ability of the systems, units, or forces to provide services to and accept services from other systems, units, or forces, and to use the exchanged services to enable them to operate effectively together. The conditions achieved among communications-electronics systems or items of communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. The degree of interoperability should be defined when referring to specific cases. (JP 1-02)

**Joint Technical Architecture (JTA)**—Identifies the standards and guidelines for new acquisitions or major modifications to existing DoD communications and information systems.

**Joint Technical Architecture - Air Force (JTA-AF)**—A comprehensive set of interfaces, services, and

supporting formats, plus user consideration for interoperability or for portability of applications, data, or people, as specified by information technology standards and profiles.

**Operational Architecture**—A description (often graphical) of the operational elements, assigned tasks, and information flows required to support the warfighter. It defines the type of information, frequency, and timeliness of the exchange, and what tasks these information exchanges support.

**Operational Architecture View**—A description (including graphics) of the tasks and activities, operational elements, and information required to accomplish a military operation. (C4ISR Architecture Framework)

**Systems Architecture**—A description, including graphics, of the systems and interconnections providing for or supporting a warfighting function. It defines the physical connection, location, and identification of the key nodes, circuits, networks, warfighting platforms, and so forth, associated with information exchange and specific system performance parameters. The system architecture is constructed to satisfy operational architecture requirements according to the standards defined in the technical architecture.

**System Architecture View**—A description (including graphics) of the tasks and activities, operational elements, and information required to accomplish a military operation. (C4ISR Architecture Framework)

**Technical Architecture**—A framework of concepts and guidance that bound a subject area, or of physical components (e.g., hardware, software, and transmission media) that interrelate to perform a bounded subset of information handling, both processing and transfer.

**Technical Architecture View**—The minimal set of rules governing the arrangement, interaction, and interdependence of system parts or elements, whose purpose is to ensure that a conformant system satisfies a specified set of requirements. (C4ISR Architecture Framework)

**To-Be Architecture**—Defines the desired or target operations, systems, or conditions.